LE "LOUIE" CAI

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EDUCATION

University of California, San Diego, Data Science B.S.   **Sept 2020 – Jun 2024 (Planned)**

- **GPA**: 3.77
- **Minor**: Computer Engineering
- **Relevant Coursework**: Machine Learning, Deep Learning, NLP, Data Analysis, Computer Organization and Systems Programming, Data Structures & Object-Oriented Design, Differential Equations, Linear Algebra, Probability and Statistics, Discrete Mathematics, Components and Design Techniques for Digital Systems

EXPERIENCE

Amazon   **Jun – Sept 2023**

Software Development Engineer Intern
- Utilized React and TypeScript to streamline backend database onboarding with a front-end internal tool.
- Collaborated in an Agile team to ensure responsive and user-friendly interfaces.
- Optimized tool performance using Git, resulting in significantly improved loading times.

UC San Diego   **Sept 2023 – Now**

CSE Tutor - CSE 8A
- Held office hours and helped students with their questions
- Created scripts to generate class grades from different data sources

PROJECTS

Convolutional Neural Network Image Classification   **Feb 2022**

- Engineered a bespoke convolutional neural network using PyTorch to classify 20 distinct categories of food images.
- Orchestrated the development and training of the neural network with PyTorch and CUDA, systematically refining network performance through architectural adjustments and hyperparameter tuning.
- Visualized and conducted in-depth analysis of feature maps and filters using Matplotlib.

iOS Mobile Hockey Game   **July 2021 – Today**

- Developed a touch-based air hockey game with C# under the Unity game engine with a functional alpha version with a proper game mechanism, scoring system, UI animations, and an AI trained through reinforcement learning with Unity's ML-Agents library
- **Technical Skills**: uses C# scripts to create custom behaviors and trigger events. Used Blender to model the puck, bat, and table. Uses Photoshop to adjust the UI sprites.

Minecraft Mod Development   **Jun – Dec 2020**

- Achieved over **2.9 million** downloads on CurseForge for the Minecraft plugin developed.
- Engineered a plugin to enhance the player experience in Minecraft by introducing interactive in-game items.

ACTIVITIES

IEEE F1TENTH IV2023 Championship - Anchorage   **Jun 2023**

- Constructed two autonomous 1/10 scale RC cars, each equipped with LiDAR sensors and cameras, enabling precise navigation on a racetrack.
- Led the development of advanced navigation algorithms using ROS2 and DonkeyCar.
- Represented UC San Diego and secured fourth place in the championship.

SKILLS

- **Programming Languages**: Python, R, SQL, Java, C, C++, C#, Bash, HTML, CSS, Typescript
- **Machine Learning/Big Data**: Machine Learning, Deep Learning, pandas, NumPy, matplotlib, scikit-learn, PyTorch, BeautifulSoup4, Request, Selenium, Plotly, FastAPI
- **Framework/Tools**: React, JavaFX, Unity, Linux, Docker, Blender, Gradle, Vim, Git, Jupyter